or after January 1, 1962. Previously approved installations may be retained as long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGD 95–027, 61 FR 26004, May 23, 1996]

§ 76.13–90 Installations contracted for prior to January 1, 1962.

(a) Installations contracted for prior to July 1, 1935, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) The main pipes and their branches to the cargo compartments and similar spaces shall be not less than 1½-inch pipe size and shall emanate from not more than two stations in easily accessible locations. If located on the open deck, the distribution manifolds shall be suitably protected by an enclosing cabinet or casing which shall be marked as required by §78.47–17 of this subchapter. Each branch line shall have a valve at the manifold which shall be marked as required by §78.47–15 of this subchapter.

(3) Branches to paint lockers and similar small spaces may be taken from the nearest stream supply line and shall be not less than ¾-inch pipe size. The valve shall be marked as required by §78.47–15 of this subchapter.

(b) Installations contracted for on or after July 1, 1935, but prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, and alterations may be made to the same standard as the original installation.

(2) Steam shall be available from the main or auxiliary boilers to provide at least one pound of steam per hour for each 50 cubic feet of gross volume of the largest compartment protected. Where reasonable and practicable, the steam pressure shall be at least 100 p.s.i.

(3) The piping system shall meet the general requirements of paragraphs (c)(5) through (12) of this section insofar as is reasonable and practicable.

(4) The minimum size of distribution piping and the number of branches to the various spaces shall be as given in table 76.13–90(b)(4) or by the following formula:

$$D=\sqrt{C}/30{,}000 \qquad (1)$$

where:

D=Required diameter of pipe in inches.
C=Volume of compartment in cubic feet.

TABLE 76.13–90(b)(4)

Volume of compartment in cubic feet		Number of branches to compartment	Pipe size of each branch, inches
Over	Not over		
.....	30,000	1	1
30,000	46,000	1	1¼
46,000	67,000	1	1½
67,000	94,000	.....	1¼
94,000	135,000	2	1½
135,000	203,000	3	1½

(5) The minimum size of the steam supply line from the boiler to the distribution and manifold shall be as given by the following formula:

$$D=\sqrt{C}/60{,}000 \qquad (2)$$

where:

D=Diameter of pipe in inches.
C=Volume of all compartments in cubic feet.

(c) Installations contracted for on or after November 19, 1952, but prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) Steam shall be available from main or auxiliary boilers to provide at least one pound of steam per hour for each 12 cubic feet of the gross volume

of the largest compartment to be protected.

(3) Although separate piping shall be led to each cargo hold and 'tween deck, for the purpose of determining the amount of steam required, a cargo compartment will be considered as the space between adjacent watertight or firescreen bulkheads and from tank top or lowest deck to the deck head of the uppermost deck on which cargo may be carried. If a trunk extends beyond such deck, the trunk space shall be included. Tonnage openings shall be considered as sealed for this purpose.

(4) A steam pressure of at least 100 p.s.i. shall be available unless specifically approved otherwise.

(5) All piping, valves, and fittings shall meet the applicable requirements of subchapter F (Marine Engineering) of this chapter.

(6) The distribution piping shall emanate from not more than three stations in easily accessible locations on the weather deck, and shall lead to the lower portion of each cargo hold, cargo 'tween deck, and other compartments protected. However, lines to paint lockers and similar small spaces may be taken from the nearest steam supply line.

(7) The distribution line to each compartment shall be fitted with a shutoff valve. The valve shall be marked as required by §78.47–15 of this subchapter.

(8) The manifold steam supply line shall be fitted with a master valve at the manifold.

(9) Provisions shall be made for draining the manifold and distribution lines to prevent them from freezing.

(10) If located on the open deck, the distribution manifolds shall be suitably protected by an enclosing cabinet or casing. In any case, it shall be marked as required by §78.47–17 of this subchapter.

(11) Piping shall not be led into or through spaces accessible to the passengers or crew while the vessel is being navigated, with the exception of machinery spaces and corridors. However, in special cases, arrangements to run piping through such spaces may be specifically approved by the Commandant, provided all joints are welded, suitable expansion bends are provided, and all piping is extra heavy.

(12) Piping shall be used for no other purpose except that it may be incorporated with the fire detecting system, and where suitable provisions are made, it may be used for steaming out tanks.

(13) The minimum size and number of branches to the various spaces shall be as given in table 76.13–90(c)(13). The distribution piping from the manifold to the branch lines shall have an area approximately equal to the combined areas of the branch lines served.

TABLE 76.13–90(c)(13)

Volume of spaces in cubic feet		Number of branches to spaces	Pipe size of each branch, inches
Over	Not over		
.....	500	1	¾
500	5,000	1	1
5,000	15,000	1	1¼
15,000	30,000	1	1½
30,000	60,000	2	1½
60,000	100,000	3	1½
100,000	190,000	4	1½

(14) The steam supply line from the boiler to any distribution manifold shall be of sufficient size to supply all the branch lines to the largest compartment and to all adjacent compartments.

[CGFR 65–50, 30 FR 16940, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15283, Dec. 6, 1966]

Subpart 76.15—Carbon Dioxide Extinguishing Systems, Details

§ 76.15–1 Application.

(a) Where a carbon dioxide extinguishing system is installed, the provisions of this subpart, with the exception of §76.15–90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of §76.15–90.

(b) The requirements of this subpart are based on a ''high pressure system'', i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for ''low pressure systems'', i.e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by